Remote Sensing Applications Division (RSAD)

CDR Program Office

Weekly Report for Feb 17, 2012
John J Bates, Chief
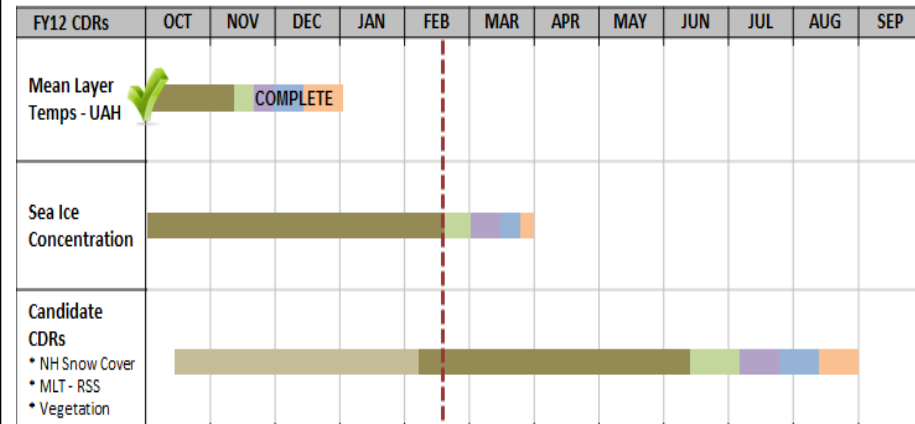
CDR Program Office
FY12 Climate Data Records

Weekly Report – Feb 17, 2012

(1) **Mean Layer Temperatures – Univ of Alabama Huntsville (UAH)**
- Completed – Nov 17

● (2) **Sea Ice Concentration**
- NSIDC daily product will be operational in March

● (3) **Candidate CDRs under initial evaluation (one to be selected):**
- *Northern Hemisphere Snow Cover – assessment complete
- *Mean Layer Temperatures RSS – assessment complete
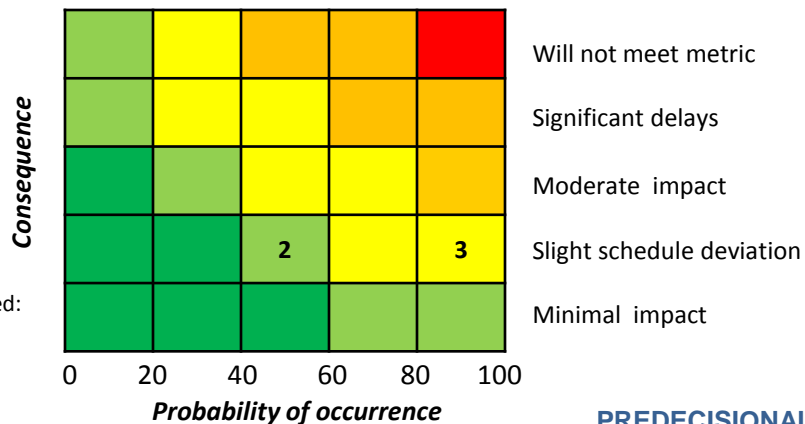- *Vegetation Bundle – assessment in progress

● No change   ↑ Increasing Risk   ↓ Decreasing Risk   *Candidate CDRs
*

R2O Schedule

FY12 CDRs	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Mean Layer Temps - UAH	✓	COMPLETE										
Sea Ice Concentration												
Candidate CDRs * NH Snow Cover * MLT - RSS * Vegetation												

R2O PHASE: ASSESSMENT | SUBMISSION PREP | TRANSFER | VALIDATION | ARCHIVE | ACCESS

Risk Matrix

	Will not meet metric
	Significant delays
	Moderate impact
2 ... 3	Slight schedule deviation
	Minimal impact

Consequence (vertical axis)

Completed: **1**

0   20   40   60   80   100
Probability of occurrence

Risk and Mitigation

- **Sea Ice monthly product will not be available until June**
  - **Release daily product in March and update the CDR in June**

- **All PIs have responded and are willing to support transition**
  - **Initial assessments are in progress**

PREDECISIONAL DRAFT INFORMATION

🟢 = On-track   🟡 = Potential management action required   🟠 = Management attention required

FY12 TCDR - Sea Ice

CDR Product: TCDR - Sea ice concentration, 1979-2010 (20 GB)
GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture

Project Status

• NSIDC is not going to put the CDR product into a separate file, but they still plan to create a monthly product
  - The earliest that NSIDC will work on the monthly product is Mar

The CDR PO plans to:

1) Release the daily CDR in March to meet the OMB Q2 metric
   - update CDR with monthly product when delivered in June
2) Not pursue a contract in FY12 for follow-on work
   - separate CDR from the other variables
   - modularize the source code
   - may just extend POR?

Next Action / Milestone

• Create new datasets (5/15)
• Archive new data and documentation updates (5/31)
• Update web page with links (6/8)

(G)

Project Risks

• If a modular/self contained code and reprocessing with new RSS data is expected - it should be outlined in a contract

ID	Task Name	Status	Start	Stop	FY11 Q4			FY12 Q1			FY12 Q2			FY11 Q3		
					Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	Initial Assessment	100	12/7/2010	1/7/2011												
2	Transfer Prep	75	1/7/2011	4/30/2012		Daily							Monthly			
2a	Comment Source Code	95	4/15/2011	4/30/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	95	1/7/2011	4/30/2012												
2c	Convert data from binary to NetCDF	50	3/1/2011	4/30/2012												
3	Tranfer Code, Docs, and Data	50	7/15/2011	5/15/2012												
4	Verify Code, Docs, and Data	50	7/31/2011	5/23/2012												
5	Archive Code, Docs, and Data	50	8/15/2011	5/31/2012												
6	Provide Access to Code, Docs, and Data	50	9/1/2011	6/8/2012												

PREDECISIONAL DRAFT INFORMATION

PI: Meier (NSIDC, SDS 2007)   RSAD Transition Manager: Peng

FY12 Candidate CDR - NH Snow Cover

CDR Product: TCDR – NH Snow Cover, 19xx-20xx (xx GB)
GEOSS Societal Benefit: TBD

Project Status

- Top candidate CDR due to its value to the water cycle
- **TM completed assessment – results briefing set for Wed.**
  - Proposal had potentially 2 CDRs
    - **Terrestrial Snow cover – viable CDR**
    - Sea Ice melt onset – not enough info provided to assess, TM will follow up with PI

Next Action/Milestone

- Letter to PI (10/14) - done
- Initial Assessment (2/9) – done

(Y)   **Project Risks**

- Funding - SDS 2008

ID	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
					FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
1	Initial Assessment	100	10/17/2011	2/9/2012												
2	Transfer Prep	0	2/6/2012	6/11/2012												
2a	Comment Source Code	0	2/6/2012	3/19/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	0	3/19/2012	4/30/2012												
2c	Create NetCDF Dataset	0	5/30/2012	6/11/2012												
3	Tranfer Code, Docs, and Data	0	4/18/2012	8/2/2012												
4	Verify Code, Docs, and Data	0	4/19/2012	8/16/2012												
5	Archive Code, Docs, and Data	0	5/31/2012	8/24/2012												
6	Provide Access to Code, Docs, and Data	0	6/1/2012	9/10/2012												

PI: Robinson (Rutgers Univ, SDS 2008)   RSAD TM: Young

FY12 Candidate CDR - Mean Layer Temperature - RSS

CDR Product: xCDR – Atmospheric Temperature Profile, 19xx-20xx (140 MB)
GEOSS Societal Benefit: Energy Sector, Agriculture, and Health

Project Status

- Initial Assessment – complete
  - PI sent all requested items
  - 1 Candidate CDR
  - **Initial evaluation available on Google docs**
    - **-- indicates a viable CDR (similar to MLT UAH),**
    - **-- PI is responsive, but code (+250) has almost no comments**
  - **Sent PI: schedule, programming standards, and samples of formatted codes**

Next Action/Milestone

- Initial Assessment (2/3) – done
- PI sends drafts: Documented code (3/19), Readme (4/2), Flow Diagram (4/9), C-ATBD (4/30)

(Y)

Project Risks

- Funding - SDS 2008

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	10/17/2011	2/3/2012												
2	Transfer Prep	0	2/6/2012	6/4/2012												
2a	Comment Source Code	0	2/6/2012	3/19/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	0	3/19/2012	4/30/2012												
2c	Create NetCDF Dataset	0	5/30/2012	6/4/2012												
3	Tranfer Code, Docs, and Data	0	4/18/2012	7/26/2012												
4	Verify Code, Docs, and Data	0	4/19/2012	8/9/2012												
5	Archive Code, Docs, and Data	0	5/31/2012	8/17/2012												
6	Provide Access to Code, Docs, and Data	0	6/1/2012	9/3/2012												

PI: Mears (RSS, SDS 2008)   RSAD TM: Dongsoo Kim

FY12 Candidate CDR - Vegetation Bundle

CDR Product: TCDR – Vegetation Bundle, 19xx-20xx (xx GB)
GEOSS Societal Benefit: Agriculture / Drought monitoring

Project Status

- Initial Assessment – PI sent code and ancillary files
  - **PI recently received code for FPAR or LAI**
    - **-- PI is testing it now – should be included in a few weeks**
  - Potentially 4 Candidate CDRs
    - -- Surface Reflectance
    - -- Vegetation Index
    - -- Fractional Photosynthetically Active Radiation (FPAR)
    - -- Leaf Area Index (LAI)

Next Action/Milestone

- Letter to PI (10/14) - done
- Initial Assessment (1/6) – 20%

(Y)   **Project Risks**

- Many unknowns until initial assessment is completed

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	Initial Assessment	20	10/17/2011	1/6/2012	██	██	██						
2	Transfer Prep	0											
2a	Comment Source Code	0											
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	0											
2c	Create NetCDF Dataset	0											
3	Tranfer Code, Docs, and Data	0											
4	Verify Code, Docs, and Data	0											
5	Archive Code, Docs, and Data	0											
6	Provide Access to Code, Docs, and Data	0											

PREDECISIONAL DRAFT INFORMATION

PI: Vermote (U of Md, CDR Grant 2009)   RSAD TM: Nelson

Other CDR Discussion Items

• **Where is the best place for the OISST product: the Operational CDR page, climate.gov, other?**

• **Andy said he can send an update for 2009, with new 2010 and 2011 data by the end of April – need archive POC He also plans to create the C-ATBD, which should be available around the same time. He also mentioned a lot of users are coming to him for data, they are struggling with our interface**

• **Terry, Candace, and Dan are working on SOWs for ICO CDR maintenance**

CDR Decisions

• **Since the monthly Sea Ice product will not be ready until June, we will release the daily product in March to meet the Q2 OMB metric and update the CDR with the monthly product when it becomes available (2/6)**

• NODC will fill in the PFSST v5.2 data gap (Sep 94 – Jan 95) with regridded and adjusted v5.0 data. The file metadata, global attributes, summary, know issues page, etc. will all be modified to ensure transparency is maintained (1/19)

• Set CDR precedence for FY12 – 1) Sea Ice, 2) MLT-UAH, 3) Snow Cover, 4) MLT-RSS, 5) Vegetation
  Sea Ice and Snow Cover are primaries due to their input into the water cycle; MLT-UAH is complete,
  MLT-RSS and Vegetation are backups (1/13)

• Sea Ice – Decided it was in the best interests of the CDRP to separate the Sea Ice CDR from the Goddard and Bootstrap products. This will allow for ease of maintenance (quarterly updates), addition of monthly product, and simplify future transition. Will work with NSIDC on delivery schedule for updated data and documentation (12/19)

• CDR Bundles - Decided there can be multiple CDRs in a bundle; each PI's CDR bundle will be transitioned together and counted as one for the OMB metric (12/1)

• FY12 Budget signed – current funding allows for three new CDRs to be transitioned in FY12, budget constraints may also postpone any updates to the current CDRs in operations (11/29)

• Ozone bundle – initial assessment revealed no CDR is available for transition, will work it as a special project and not as an FY12 CDR (11/16)
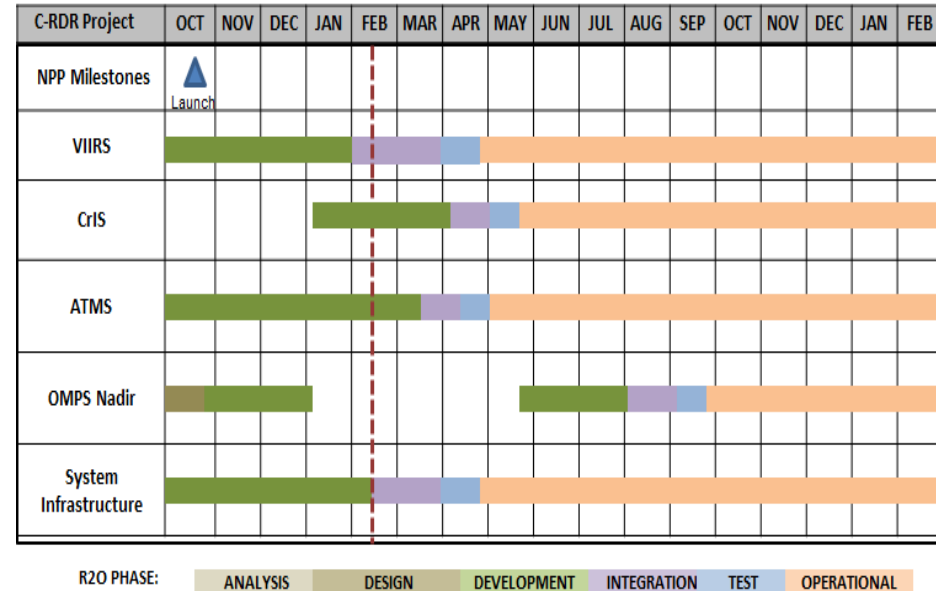
CDR Program Office
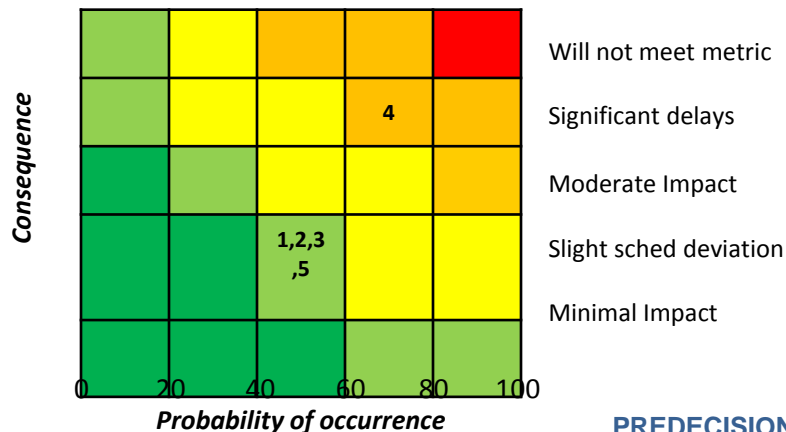# NPP/JPSS Climate Raw Data Records (C-RDRs) Project

Weekly Report – February 17, 2012

(1) VIIRS
- Developing code to test the VIIRS C-RDR.

(2) CrIS
- Analyzing CrIS code from ADL.

(3) ATMS
- Developing code to write the ATMS C-RDR.

(4) OMPS Nadir
- Developing code to write the OMPS Nadir C-RDR.

(5) System Infrastructure
- Developing ingest processing for RDRs.

- **Working on draft of the CrIS Product Specification documents**
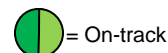- **Starting integration of VIIRS C-RDR with the system infrastructure.**

● No change   ↑ Increasing Risk   ↓ Decreasing Risk

C-RDR Project	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
NPP Milestones (Launch)																	
VIIRS																	
CrIS																	
ATMS																	
OMPS Nadir																	
System Infrastructure																	

R2O PHASE: ANALYSIS | DESIGN | DEVELOPMENT | INTEGRATION | TEST | OPERATIONAL

Risk Matrix

Consequence (y-axis, top to bottom):
- Will not meet metric
- Significant delays — **4**
- Moderate Impact
- Slight sched deviation — **1,2,3,5**
- Minimal Impact

Probability of occurrence (x-axis): 0, 20, 40, 60, 80, 100

Risk and Mitigation

VIIRS, CrIS, ATMS, OMPS Nadir –
- Operational software is under maintenance, updated versions may affect C-RDR ported version.

System Infrastructure –
- Reliability of NPP RDRs from CLASS. Need to test ingest of RDRs from CLASS and develop an automated mechanism for re-requesting data.
- Ability of CLASS to handle the frequency and volume of NPP data. CLASS has been successful during system tests.
- Archive in CLASS is currently cost prohibitive. Need to identify alternate archive. Plan to store C-RDRs on HPSS until migration to CLASS.

PREDECISIONAL DRAFT INFORMATION

2/24/2012

● = On-track   ● = Potential management action required   ● = Management attention required

Visible Infrared Imaging Radiometer Suite (VIIRS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format
GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

Project Status

- **Preparing for integration with system infrastructure.**
- **Modifying Support Data Packer/Unpacker for ADL 3.1.**
- **Developing and testing code to write file level metadata.**
- Implemented and verified netCDF compression.
- Verifying (IDPS) documentation and code changes with DEWG.
- Wrote a test application to dump data from RDR APIDs.
- Completed writing science and spacecraft diary data.
- Completed test of code that writes VIIRS Support Data.
- Tracked down inconsistencies with PC files (docs vs code).
- Completed C-RDR Packer and UnPacker framework for VIIRS Supporting Data.
- Completed release of netCDF4 file creation toolset.

Next Action / Milestone

- Development complete for the VIIRS C-RDR.

(G)

Project Risks

- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version

Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	10/23/2009	5/4/2010												
2	Design	Completed	5/6/2010	1/5/2011												
3	Development	95.00%	1/6/2011	1/30/2012												
3a	Develop VIIRS processing component	95.00%	1/6/2011	1/12/2012												
3b	Test VIIRS processing component	95.00%	12/28/2011	1/30/2012												
4	Integration		1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

2/24/2012

POC: Biard

Cross-track Infrared Sounder (CrIS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format
GEOSS Societal Benefit: Climate, Water, Energy

Project Status
- **Working on developing C-RDR packer.**
- **Completing first draft CrIS C-RDR Product Specification.**
- Built and executing CrIS software in ADL 3.1.
- CrIS proprietary code issues have been resolved.
- Obtained the ADL version of the CrIS code.
- Developing code to create data structures for writing the C-RDR.
- Creating a MATLAB reader for the C-RDR to provide easy access.
- Evaluating processing of C-RDR with MATLAB and IDL
- Defining the netCDF4 structure for the C-RDR and developing software for writing the C-RDR.
- Ported operational algorithms (Space Dynamics Lab at Utah State)

Next Action / Milestone
- Develop code to write CrIS C-RDR.

(G)

Project Risks
- CrIS science algorithms not available to contractors: C-RDR team, cal/val teams, ADL developer cannot get CrIS SDR code. Government procured rights to the CrIS code.
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version. Mitigated by using ADL.

Project Schedule

ID	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	8/16/2010	11/24/2010												
2	Design	90.00%	11/26/2010	2/15/2011												
3	Development (Phase 2)		1/3/2012	4/7/2012				▓	▓	▓	▓					
3a	Develop CrIS processing component	60.00%	1/3/2012	3/8/2012				▓	▓	▓						
3b	Test CrIS processing component		3/2/2012	4/7/2012						▓	▓					
4	Integration		4/2/2012	4/27/2012							▓					
5	Test		4/30/2012	5/9/2012								▓				
5a	Dry Runs		4/30/2012	5/8/2012								▓				
5b	System Acceptance Test		5/9/2012	5/9/2012								▓				
6	Operational		5/10/2012									▓	▓	▓	▓	▓

Advanced Technology Microwave Sounder (ATMS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format
GEOSS Societal Benefit: Climate, Water, Energy

Project Status

- **Developing code to write science data.**
- Working on ATMS C-RDR Product Specification.
- Testing the software framework for the Support Data Packer and Unpacker.
- Updating C-RDR data format.
- Defining the C-RDR format, contents, and metadata
- Identifying code and data structures required for C-RDR processing.
- Verified processing of ATMS algorithms
- IDPS ATMS algorithm executing in ADL at NCDC
- Obtained ported algorithms (SDL at Utah State)

Next Action / Milestone

- Develop the code to produce the C-RDR.

(G)

Project Risks

- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version
- Developer shares time working NPP and CLASS issues.

Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1 Oct	Nov	Dec	FY12 Q2 Jan	Feb	Mar	FY12 Q3 Apr	May	Jun	FY12 Q4 Jul	Aug	Sep
1	Analysis	Complete	10/29/2010	2/10/2011												
2	Design	95.00%	2/11/2011	4/29/2011												
3	Development	35.00%	5/2/2011	3/25/2012												
3a	Develop ATMS processing component	70.00%	5/2/2011	2/29/2012												
3b	Test ATMS processing component	5.00%	2/18/2012	3/25/2012												
4	Integration		3/26/2012	4/18/2012												
5	Test		4/19/2012	4/26/2012												
5a	Dry Runs		4/19/2012	4/25/2012												
5b	System Acceptance Test		4/26/2012	4/26/2012												
6	Operational		4/27/2012													

POC: Saunders

Ozone Mapping Profile Suite (OMPS) Nadir

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format
GEOSS Societal Benefit: Climate, Energy

Project Status

- **Developing code to write and read support data.**
- Developing code to write spacecraft diary data to C-RDR.
- Wrote framework for the Support Data Packer and Unpacker.
- Debugging code that writes spacecraft diary data.
- Updated product specification for OMPS Nadir.
- Wrote science output classes for OMPS C-RDR.
- Setting up OMPS Nadir and ADL code for development.
- Analyzing IDPS algorithms to define the OMPS Nadir C-RDR .
- OMPS Nadir algorithms will be released in ADL 3.0.
- Analyzing the IDPS software for the OMPS Nadir SDR for the use in developing the C-RDR

Next Action / Milestone

- Complete support data for OMPS Nadir.
- Delayed OMPS Nadir C-RDR until completion of CrIS C-RDR.

Project Risks

- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version

Project Schedule

ID	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
					FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
1	Analysis	100.00%	5/23/2011	7/12/2011	■											
2	Design	100.00%	7/13/2011	9/28/2011	■	■	■									
3	Development (Phase 2)		5/11/2012	8/15/2012								■	■	■		
3a	Develop OMPS Nadir processing component		5/11/2012	7/20/2012								■	■			
3b	Test OMPS Nadir processing component		7/13/2012	8/15/2012										■		
4	Integration		8/16/2012	9/5/2012											■	
5	Test		9/6/2012	9/13/2012												■
5a	Dry Runs		9/6/2012	9/12/2012												■
5b	System Acceptance Test		9/13/2012	9/13/2012												
6	Operational		9/14/2012													■

2/24/2012

POC: Burden

C-RDR System Infrastructure

C-RDR Product: Infrastructure to automate the production of the C-RDRs.
GEOSS Societal Benefit: None

Project Status

- **Setting up the system infrastructure on the Blade Center for integration.**
- **Working on managing queues and processing jobs.**
- Locating, validating, and statusing files for processing.
- Integrating manifest processing with the ingest system.
- Developing code for ingest detection and processing.
- C-RDR needs to handle CLASS manifests. SIPGenSys will not.
- Completed NPP 14 day Ground Operations Exercise (GOE).
- Completed throughput testing for SIPGenSys.
- Creating database tables and access procedures for config files.
- Setting up configuration files and software for the ingest test.

Next Action / Milestone

- Complete coding of C-RDR ingest functions.

(G)

Project Risks

- Ability of CLASS to provide full stream of RDRs and ability to ingest stream of C-RDRs. Ability of CLASS to provide RDRs will be tested during NCT4.
- Need to develop an automated re-request mechanism for CLASS.

Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1 Oct	Nov	Dec	FY12 Q2 Jan	Feb	Mar	FY12 Q3 Apr	May	Jun	FY12 Q4 Jul	Aug	Sep
1	Analysis	Completed	9/29/2010	4/22/2011												
2	Design	90.00%	4/25/2011	7/8/2011												
3	Development	80.00%	5/31/2011	2/28/2012												
3a	Develop infrastructure	90.00%	5/31/2011	2/14/2012												
3b	Test infrastructure	70.00%	9/27/2011	2/28/2012												
4	Integration (Phase 2)	5.00%	1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

PREDECISIONAL DRAFT INFORMATION

POC: Copley